

ABSTRACT

A micropump utilizing gas generation includes a silicon substrate having a reservoir for H_2O_2 solution
5 formed therein, a SiO_2/Si_3N_4 film formed on the silicon substrate, and a PDMS combined on the SiO_2/Si_3N_4 film, wherein the PDMS has a reservoir for MnO_2 , a sample reservoir connected to the reservoir through a conduit, a sample injection opening, and a minute channel. Further, a
10 cell culture unit utilizing gas generation possesses a carbon dioxide supply including a glass substrate to secure a reservoir, a hot-wire formed inside the reservoir, a PDMS having the reservoir formed by combining the PDMS on the bottom surface and an air supply line connected to the
15 reservoir through a conduit, a thin permeable PDMS film arranged on the PDMS, and a PDMS cover being combined on the PDMS film and having a channel through which a cell culture medium flows and a culture surface for a cell engraved therein.